

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P518076

Luminaire Tested: HVL8-4-LD4-2LO-30-UNV-C-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P518076
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-4-LD4-2LO-30-UNV-C-EDD
Description: 4 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 3000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5163.0 lumens
Efficiency: N/A
Efficacy: 112.0 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 4' x H: 0.17')
CIE Type: Direct

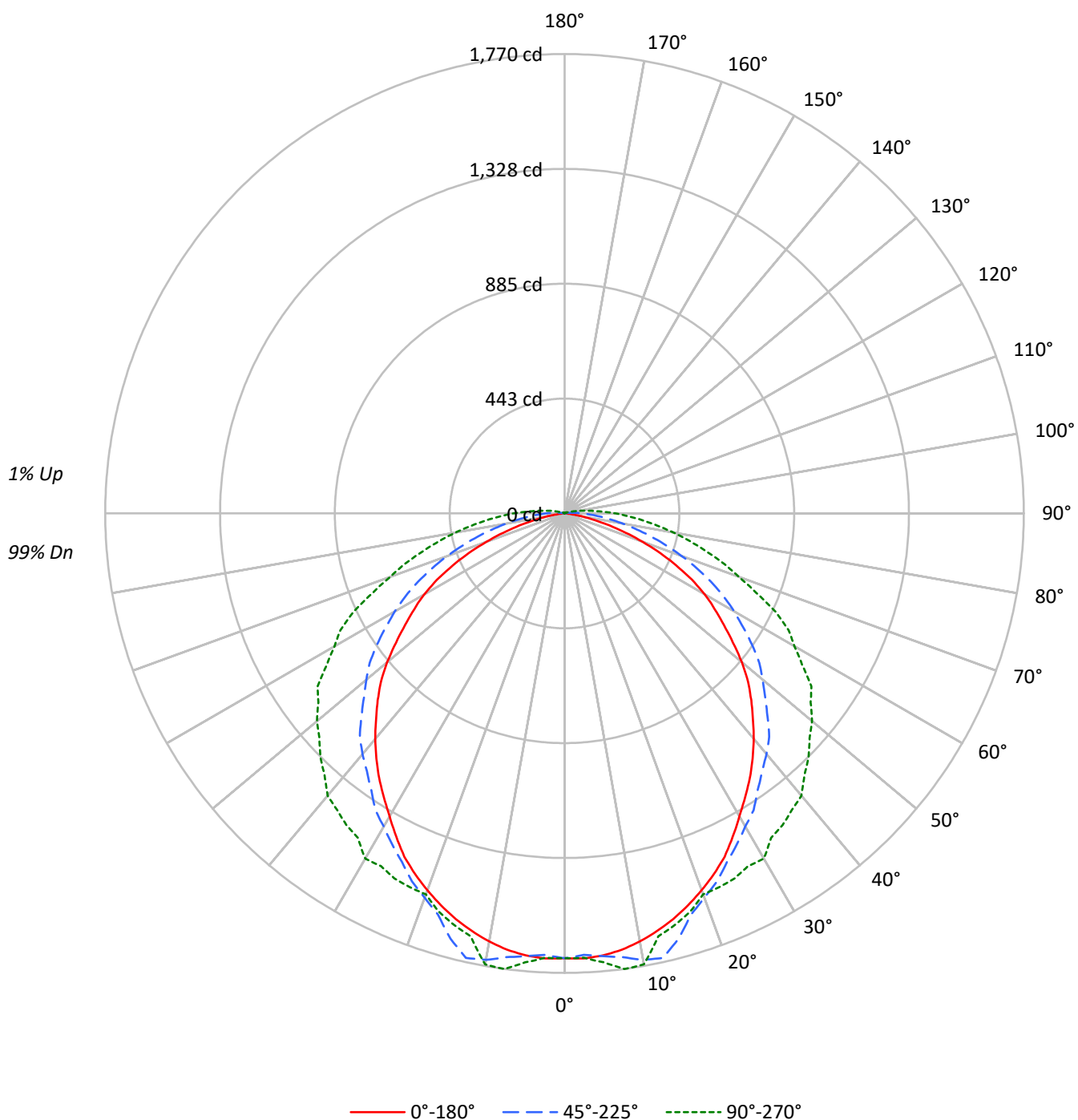
Input Watts (W): 46.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	39	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6918	6918	6918
5°	6902	6814	6884
10°	6811	6906	6927
15°	6688	6719	6429
20°	6537	6294	6148
25°	6377	6021	6187
30°	6135	5802	6255
35°	5962	5594	6145
40°	5776	5437	6182
45°	5577	5236	6071
50°	5335	5024	6025
55°	4979	4798	6021
60°	4705	4488	5764
65°	4160	4117	5581
70°	3394	3637	5004
75°	2421	3055	4569
80°	1359	2468	4101
85°	505	1863	3612

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 6071 cd/sqm

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CATALOG NUMBER: HVL8-4-LD4-2LO-30-UNV-C-EDD

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.7	3.2
10°-20°	469.1	9.1
20°-30°	697.9	13.5
30°-40°	838.9	16.2
40°-50°	883.0	17.1
50°-60°	819.3	15.9
60°-70°	647.8	12.5
70°-80°	395.7	7.7
80°-90°	172.4	3.3
90°-100°	53.7	1.0
100°-110°	12.0	0.2
110°-120°	4.8	0.1
120°-130°	2.7	0.1
130°-140°	0.7	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1331.7	25.8
0°-40°	2170.7	42.0
0°-60°	3873.0	75.0
0°-90°	5089.0	98.6
90°-120°	70.6	1.4
90°-150°	74.0	1.4
90°-180°	74.0	1.4
0°-180°	5163.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1714	1714	1714	1714	1714	
5°	1710	1706	1712	1731	1736	162
15°	1618	1680	1697	1640	1642	456
25°	1460	1553	1482	1526	1551	670
35°	1245	1280	1299	1417	1465	778
45°	1018	1022	1106	1282	1330	784
55°	750	762	883	1076	1161	673
65°	474	490	622	823	898	470
75°	179	238	347	533	566	196
85°	16	56	135	262	301	25
90°	0	17	71	166	196	1
95°	0	4	31	91	111	0
105°	0	2	6	18	25	0
115°	0	1	5	8	8	1
125°	0	1	2	5	7	1
135°	1	1	1	2	2	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1713.8	1713.8	1713.8	1713.8	1713.8
2.5°	1715.9	1711.4	1702.0	1711.0	1713.5
5°	1709.6	1706.2	1712.1	1731.3	1736.2
7.5°	1695.3	1708.6	1724.3	1759.2	1770.4
10°	1674.0	1699.2	1746.3	1776.0	1764.5
12.5°	1648.2	1690.8	1754.0	1696.0	1669.1
15°	1618.2	1680.3	1696.7	1640.5	1641.6
17.5°	1582.9	1671.6	1621.0	1619.6	1609.4
20°	1544.9	1642.3	1575.2	1572.4	1561.6
22.5°	1504.0	1603.5	1534.7	1529.2	1558.5
25°	1459.7	1552.9	1482.0	1526.4	1551.1
27.5°	1404.2	1486.6	1438.0	1500.9	1531.9
30°	1348.0	1418.1	1393.0	1480.6	1535.8
32.5°	1295.2	1346.6	1356.0	1472.9	1482.0
35°	1245.3	1279.9	1299.1	1417.1	1465.3
37.5°	1190.5	1199.9	1250.9	1393.7	1440.1
40°	1134.6	1128.7	1210.4	1355.3	1419.5
42.5°	1074.6	1072.5	1167.5	1336.1	1368.2
45°	1017.7	1022.2	1106.4	1281.6	1329.5
47.5°	959.4	965.3	1048.4	1221.9	1281.3
50°	891.7	899.3	996.7	1168.9	1245.3
52.5°	818.3	833.0	946.5	1118.6	1195.7
55°	749.6	761.8	882.6	1075.6	1161.2
57.5°	686.7	694.1	816.6	1021.5	1086.1
60°	624.9	626.7	754.5	961.5	1023.3
62.5°	554.1	557.2	690.6	890.6	973.3
65°	474.5	489.5	621.8	822.9	897.6
67.5°	400.1	426.3	551.6	760.7	799.8
70°	320.5	364.8	482.8	687.8	715.3
72.5°	247.5	299.5	412.3	606.1	644.8
75°	179.4	237.8	346.7	532.8	566.3
77.5°	120.8	180.1	285.2	451.8	496.1
80°	72.3	131.6	230.4	376.7	426.6
82.5°	37.0	88.3	178.7	316.0	360.6
85°	16.1	55.9	135.1	262.2	300.9
87.5°	4.5	31.8	99.5	211.9	244.7
90°	0.3	16.8	70.9	166.2	195.9
92.5°	0.3	8.0	49.9	125.7	148.4
95°	0.3	4.2	31.1	91.1	111.4
97.5°	0.3	2.4	18.9	64.6	81.7
100°	0.3	2.1	11.2	42.9	58.3
102.5°	0.3	2.4	7.7	27.2	38.1
105°	0.3	2.4	6.3	17.8	25.1
107.5°	0.7	2.4	5.6	13.3	17.5
110°	0.3	2.1	5.9	10.1	13.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.7	1.7	5.6	8.4	10.1
115°	0.3	1.4	4.9	8.0	8.4
117.5°	0.7	1.0	3.8	8.0	8.4
120°	0.7	0.7	3.1	7.7	8.7
122.5°	0.7	0.7	2.4	7.0	8.4
125°	0.3	0.7	2.1	5.2	7.3
127.5°	0.7	0.7	1.7	4.2	5.6
130°	0.7	0.7	1.4	3.1	4.2
132.5°	0.7	0.7	1.0	2.4	3.1
135°	0.7	0.7	0.7	1.7	2.4
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)